AMENDMENT TO THE CLAIMS

The listing of the claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method of performing channel estimation in a wireless system comprising [[the steps of]]:

receiving a signal comprising a plurality of training symbols embedded within a plurality of data symbols;

estimating a plurality of training channel responses for the plurality of training symbols; and

adapting an interpolator for generating a plurality of data channel responses for the plurality of data symbols by interpolating the plurality of training channel responses.

2. (Original) The method of claim 1 wherein the interpolator is adaptively modified based on at least one system characteristic.

3. (Currently Amended) The method of claim 2, further comprising [[the step of]]:

generating a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial

configuration of transmit antennas and a transmit diversity mode, wherein the interpolator is adaptively modified based on the characteristic signal.

4. (Currently Amended) The method of claim 1 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency and code, further comprising [[the step of]]:

generating a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

5. (Currently Amended) The method of claim 1 further comprising [[the step of]] generating the signal using at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

6. (Currently Amended) A method of performing channel estimation in a wireless system comprising [[the steps of]]:

receiving a plurality of signals from a plurality of transmitters, each of the plurality of signals comprising a plurality of training symbols embedded within a corresponding plurality of data symbols;

estimating a plurality of training channel responses for each plurality of training symbols; and

adapting at least one interpolator for generating a plurality of data channel responses for each plurality of data symbols by interpolating the plurality of training channel responses for the corresponding plurality of training symbols.

7. (Original) The method of claim 6 wherein at least one interpolator is adaptively modified based on at least one system characteristic.

8. (Currently Amended) The method of claim 7, further comprising [[the step of]]:

generating a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein at least one interpolator is adaptively modified based on the characteristic signal.

9. (Currently Amended) The method of claim 6 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency and code, further comprising [[the step of]]:

generating a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

10. (Currently Amended) The method of claim 6 further comprising [[the step of]] generating the signal using at least one of an orthogonal frequency division multiplex protocol, a

code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

11. (Currently Amended) The method of claim 6 further comprising [[the steps of]] separating each plurality of training symbols by at least one of time, frequency and code.

12. (Currently Amended) A method of performing channel estimation in a wireless system comprising [[the steps of]]:

receiving a signal comprising a plurality of training symbols embedded within a plurality of data symbols;

estimating a plurality of training channel responses for the plurality of training symbols; and

selecting at least one of a plurality of interpolators for generating a plurality of data channel responses for the plurality of data symbols by interpolating the plurality of training channel responses.

13. (Original) The method of claim 12 wherein at least one interpolator is adaptively modified based on at least one system characteristic.

14. (Currently Amended) The method of claim 13, further comprising [[the step of]]:

generating a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial

configuration of transmit antennas and a transmit diversity mode, wherein at least one interpolator is adaptively modified based on the characteristic signal.

15. (Currently Amended) The method of claim 12 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency and code, further comprising [[the step of]]:

generating a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

16. (Currently Amended) The method of claim 12 further comprising [[the step of]] generating the signal using at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

17. (Currently Amended) A method of performing channel estimation in a wireless system comprising [[the steps of]]:

receiving a plurality of signals from a plurality of transmitters, each of the plurality of signals comprising a plurality of training symbols embedded within a corresponding plurality of data symbols;

estimating a plurality of training channel responses for each plurality of training symbols; and

selecting at least one of a plurality of interpolators for generating a plurality of data channel responses for each plurality of data symbols by interpolating the plurality of training channel responses for the corresponding plurality of training symbols.

18. (Original) The method of claim 17 wherein at least one of the plurality of interpolators is selected based on at least one system characteristic.

19. (Currently Amended) The method of claim 18, further comprising [[the step of]]:

generating a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein at least one of the plurality of interpolators is selected based on the characteristic signal.

20. (Currently Amended) The method of claim 17 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency and code, further comprising [[the step of]]:

generating a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

21. (Currently Amended) The method of claim 17 further comprising [[the step of]] generating the signal using at least one of an orthogonal frequency division multiplex protocol, a

code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

22. (Currently Amended) The method of claim 17 further comprising [[the steps of]] separating each plurality of training symbols by at least one of time, frequency and code.

23. (Original) A subscriber unit for receiving a signal comprising a plurality of training symbols embedded within a plurality of data symbols, the subscriber unit comprising:

a response estimator for estimating a plurality of training channel responses for the plurality of training symbols; and

an adaptive interpolator for generating a plurality of data channel responses for the plurality of data symbols by interpolating the plurality of training channel responses.

24. (Original) The subscriber unit of claim 23 wherein the adaptive interpolator is adaptively modified based on at least one system characteristic.

25. (Original) The subscriber unit of claim 24, further comprising a characteristic signal generator configured to generate a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein the adaptive interpolator is adaptively modified based on the characteristic signal.

26. (Original) The subscriber unit of claim 23 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency, and code, the adaptive interpolator being configured to generate a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

27. (Original) The subscriber unit of claim 23, wherein the signal comprises at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

28. (Original) A subscriber unit for receiving a signal comprising a plurality of training symbols embedded within a plurality of data symbols, the subscriber unit comprising:

a response estimator for estimating a plurality of training channel responses for the plurality of training symbols; and

a selector for selecting at least one of a plurality of interpolators for generating a plurality of data channel responses for the plurality of data symbols by interpolating the plurality of training channel responses.

29 (Original) The subscriber unit of claim 28 wherein the selector is configured to select at least one of the plurality of interpolators based on at least one system characteristic.

30. (Original) The subscriber unit of claim 29, wherein a characteristic signal generator configured to generate a characteristic signal based on at least one of an estimated delay spread,

an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein the selector is configured to generate a selection signal based on the characteristic signal.

31. (Original) The subscriber unit of claim 28 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency, and code, the plurality of interpolators being configured to generate a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

32. (Original) The subscriber unit of claim 28, wherein the signal comprises at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

33. (Original) A wireless system comprising:

a transmitter for transmitting a signal comprising a plurality of training symbols embedded within a plurality of data symbols; and

a subscriber unit comprising:

a response estimator for estimating a plurality of training channel responses for the plurality of training symbols; and

an adaptive interpolator for generating a plurality of data channel responses for the plurality of data symbols by interpolating the plurality of training channel responses.

34. (Original) The wireless system of claim 33 wherein the adaptive interpolator is adaptively modified based on at least one system characteristic.

35. (Original) The wireless system of claim 34, further comprising a characteristic signal generator configured to generate a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein the adaptive interpolator is adaptively modified based on the characteristic signal.

36. (Original) The wireless system of claim 33 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency, and code, the adaptive interpolator being configured to generate a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

37. (Original) The wireless system of claim 33, wherein the signal comprises at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

38. (Original) A wireless system comprising:

a plurality of transmitters for transmitting a plurality of signals, each of the plurality of signals comprising a plurality of training symbols embedded within a corresponding plurality of data symbols; and

a receiver comprising:

a response estimator for estimating a plurality of training channel responses for the plurality of training symbols; and

an adaptive interpolator for generating a plurality of data channel responses for each plurality of data symbols by interpolating the plurality of training channel responses for the corresponding plurality of training symbols.

39. (Original) The wireless system of claim 38 wherein the at least one interpolator is adaptively modified based on at least one system characteristic.

40. (Original) The wireless system of claim 39, further comprising a characteristic signal generator configured to generate a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein at least one interpolator is adaptively modified based on the characteristic signal.

41. (Original) The wireless system of claim 38 wherein each plurality of training symbols are embedded within the corresponding plurality of data symbols over at least one of time, frequency, and code, the adaptive interpolator being configured to generate the plurality of data

channel responses for each plurality of data symbols by interpolating the plurality of training channel responses for the corresponding plurality of training symbols across at least one of time, frequency and code.

42. (Original) The wireless system of claim 38 wherein the signal comprises at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

43. (Original) The wireless system of claim 38 wherein the subscriber unit further comprises a separator configured to separate each plurality of training symbols by at least one of time, frequency and code.

44. (Original) A wireless system comprising:

a transmitter for transmitting a signal comprising a plurality of training symbols embedded within a plurality of data symbols; and

a subscriber unit comprising:

a response estimator for estimating a plurality of training channel responses for the plurality of training symbols; and

a selector for selecting at least one of a plurality of interpolators for generating a plurality of data channel responses for the plurality of data symbols by interpolating the plurality of training channel responses.

45 (Original) The wireless system of claim 44 wherein the selector is configured to select at least one of the plurality of interpolators based on at least one system characteristic.

46. (Original) The wireless system of claim 45 further comprising a characteristic signal generator configured to generate a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein the selector is configured to generate a selection signal based on the characteristic signal, the selector being configured to select at least one of the plurality of interpolators based on the selection signal.

47. (Original) The wireless system of claim 44 wherein each of the plurality of training symbols are embedded within the plurality of data symbols over at least one of time, frequency, and code, the selector being configured to generate a data channel response for each of the plurality of data symbols by interpolating the plurality of training channel responses across at least one of time, frequency and code.

48. (Original) The wireless system of claim 44 wherein the signal comprises at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

49. (Original) A wireless system comprising:

a transmitter for transmitting a signal comprising a plurality of training symbols embedded within a plurality of data symbols; and

a subscriber unit comprising:

a response estimator for estimating a plurality of training channel responses for the plurality of training symbols; and

a selector for selecting at least one of a plurality of interpolators for generating a plurality of data channel responses for the plurality of data symbols by interpolating the plurality of training channel responses for the corresponding plurality of training symbols.

50. (Original) The wireless system of claim 49 wherein at least one interpolator is selected based on at least one system characteristic.

51. (Original) The wireless system of claim 50 further comprising a characteristic signal generator configured to generate a characteristic signal based on at least one of an estimated delay spread, an estimated Doppler spread, an estimated noise, an estimated interference, a modulation order, a training tone location, a training tone density, a number of transmit antennas, a spatial configuration of transmit antennas and a transmit diversity mode, wherein the selector generates a selection signal based on the characteristic signal, the selector being configured to select at least one of the plurality of interpolators based on the selection signal.

52. (Original) The wireless system of claim 49 wherein each of the plurality of training symbols are embedded within the corresponding plurality of data symbols over at least one of time,

frequency, and code, the plurality of interpolators being configured to generate a plurality of data channel responses for each plurality of data symbols by interpolating the plurality of training channel responses for the corresponding plurality of training symbols across at least one of time, frequency and code.

53. (Original) The wireless system of claim 49 wherein the signal comprises at least one of an orthogonal frequency division multiplex protocol, a code division multiplex protocol, a wavelet transform protocol, a frequency hopping protocol and a single carrier protocol.

54. (Original) The wireless system of claim 49, wherein the subscriber unit further comprises a separator configured to separate each plurality of training symbols by at least one of time, frequency and code.